

REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

I. CLAIM STATUS & AMENDMENTS

Claims 1-3 and 5-9 were pending in this application when last examined and stand rejected.

To further clarify the invention, claim 1 has been amended to replace “wherein energy transfer from the labeling substance to the intercalator or the energy-absorbing substance is intercepted” with “thereby resulting in no quenching of the labeling substance.” The latter wording is more consistent with the disclosure on page 8, lines 11-29. Furthermore, it is noted that the new wording has substantially the same meaning as the old.

Claim 1 has also been amended to recite “interacts with” instead of “binds.” The new wording is more consistent with the disclosure on page 8, lines 15-17. Further the term “interacts” includes “intercalates” and “binds.” More particularly, it is well known that an intercalator is intercalated into a double-stranded nucleic acid. Support for this amendment can be found in the specification, for example, at page 7, lines 28-32 and page 9, lines 7-13.

II. FOREIGN PRIORITY

On page 2 of the Office Action, it is indicated that a certified copy and translation of the foreign priority document, Japanese application 1999-268745, has not yet been received in the PTO.

It is again noted that a certified copy of the priority document was forwarded to WIPO during prosecution of the international application, and that a copy should have been forwarded to the PTO from the International Bureau. See the copy of Form PCT/IB/304 attached to the last response. Nonetheless, a certified copy of the foreign priority document will be submitted in due course to perfect the claim of priority.

III. REJECTION UNDER 35 U.S.C. § 102

Claims 1-3 and 5-9 remain rejected under 35 U.S.C. § 102(b) as anticipated by Livak. See item 1 on pages 2-7 of the Office Action.

It is respectfully submitted that the present amendment overcomes this rejection for the reasons noted below and for the reasons set forth in section III on pages 4-6 of the response filed June 30, 2004.

The rejection appears to have been maintained on the basis that the previous response includes arguments to limitations not in the claims. At lines 11-12 on page 6 of the Office Action, is indicated that “without a requirement for the interception to result in no quenching, or a requirement for a hybridization step to necessitate the interception” the prior art will remain applicable.

Claim 1 has been amended to address this issue. Specifically, the amended claim includes a requirement that the hybridization of the probe with the target nucleic acid results in no quenching of the labeling substance. This language is consistent with the disclosure on page 8, lines 11-29.

As noted in the prior response, Livak fails to disclose or suggest each and every element of the claimed invention, namely a probe comprising an intercalator or an energy-absorbing substance that specifically binds a double-stranded nucleic acid due to the hybridization of the probe with a target nucleic acid whereby the energy transfer from the labeling substance to the energy-absorbing substance is intercepted resulting in no quenching.

From Figure 2 in Livak (and as discussed in column 7, lines 10-25), it is evident that the fluorescence of the reporter molecule is unquenched when a target molecule is hybridized to the probe and a hairpin structure of the probe is thereby straightened. In other words, when the probe is hybridized to the target sequence, the probe of Livak undergoes a conformational change whereby the quencher is not positioned close enough to the reporter molecule to quench the fluorescence. See column 7, lines 15-20.

By contrast, the probe of amended claim 1 does not involve such conformational change. Instead, the claimed probe is characterized in that the energy-absorbing substance, such as an

intercalator, specifically binds the double-stranded nucleic acid due to the hybridization of the probe with a target nucleic acid. This causes the energy transfer from the labeling substance to the energy-absorbing substance to be intercepted which results in no quenching. Thus, the amended claimed invention is distinguishable from Livak, because Livak fails to disclose or suggest this interaction.

In view of the above, the rejection of claims 1-3 and 5-9 under 35 U.S.C. §102(b) is untenable and should be withdrawn.

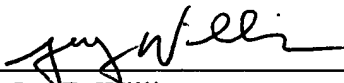
CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and early notice to that effect is hereby requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact the undersigned attorney at the telephone number below.

Respectfully submitted,

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